

AMENDMENTS TO THE CLAIMS

1. (Original) A method for determining whether an agent possesses a defined biological activity, the method comprising the steps of:

(a) making at least one comparison from the group consisting of:

(1) comparing an efficacy value of the agent to at least one reference efficacy value to yield an efficacy comparison result, wherein each efficacy value represents at least one expression pattern of the same efficacy-related population of genes, or at least one expression pattern of the same efficacy-related population of proteins;

(2) comparing a toxicity value of the agent to at least one reference toxicity value to yield a toxicity comparison result, wherein each toxicity value represents at least one expression pattern of the same toxicity-related population of genes, or at least one expression pattern of the same toxicity-related population of proteins;

(3) comparing a classifier value of the agent to at least one reference classifier value to yield a classifier comparison result, wherein each classifier value represents at least one expression pattern of the same classifier population of genes, or at least one expression pattern of the same classifier population of proteins; and

(b) using the comparison result(s) obtained in step (a) to determine whether the agent possesses the defined biological activity.

2. (Original) The method of Claim 1 comprising the steps of:

(a) making at least two comparisons from the group consisting of:

(1) comparing an efficacy value of the agent to at least one reference efficacy value to yield an efficacy comparison result, wherein each efficacy value represents at least one expression pattern of the same efficacy-related population of genes, or at least one expression pattern of the same efficacy-related population of proteins;

(2) comparing a toxicity value of the agent to at least one reference toxicity value to yield a toxicity comparison result, wherein each toxicity value represents at least one

expression pattern of the same toxicity-related population of genes, or at least one expression pattern of the same toxicity-related population of proteins;

(3) comparing a classifier value of the agent to at least one reference classifier value to yield a classifier comparison result, wherein each classifier value represents at least one expression pattern of the same classifier population of genes, or at least one expression pattern of the same classifier population of proteins; and

(b) using the comparison results obtained in step (a) to determine whether the agent possesses the defined biological activity.

3. (Original) The method of Claim 1 comprising the steps of:

(a) comparing an efficacy value of the agent to at least one reference efficacy value to yield an efficacy comparison result, wherein each efficacy value represents at least one expression pattern of the same efficacy-related population of genes, or at least one expression pattern of the same efficacy-related population of proteins;

(b) comparing a toxicity value of the agent to at least one reference toxicity value to yield a toxicity comparison result, wherein each toxicity value represents at least one expression pattern of the same toxicity-related population of genes, or at least one expression pattern of the same toxicity-related population of proteins;

(c) comparing a classifier value of the agent to at least one reference classifier value to yield a classifier comparison result, wherein each classifier value represents at least one expression pattern of the same classifier population of genes, or at least one expression pattern of the same classifier population of proteins; and

(d) using the efficacy comparison result, the toxicity comparison result and the classifier comparison result to determine whether the agent possesses the defined biological activity, wherein steps (a), (b) and (c) can occur in any order with respect to each other.

4. (Original) The method of Claim 1 wherein the agent is a chemical agent.

5. (Original) The method of Claim 1 wherein the defined biological activity is stimulation of a biological response.

6. (Original) The method of Claim 1 wherein the defined biological activity is inhibition of a biological response.

7. (Original) The method of Claim 1 wherein the defined biological activity is amelioration of at least one symptom of a disease in a mammal.

8. (Original) The method of Claim 1 wherein the defined biological activity is partial agonist activity with respect to a biological response, or with respect to a protein that mediates a biological response.

9. (Original) The method of Claim 8 wherein the defined biological activity is partial agonist activity with respect to PPAR γ .

10. (Original) The method of Claim 1 wherein the at least one reference efficacy value is the efficacy value of a reference agent that possesses the defined biological activity.

11. (Original) The method of Claim 1 wherein the at least one reference toxicity value is the toxicity value of a reference agent that possesses the defined biological activity.

12. (Original) The method of Claim 1 wherein the at least one reference classifier value is the classifier value of a reference agent that possesses the defined biological activity.

13. (Original) The method of Claim 1 wherein at least one member of the group consisting of the efficacy value of the agent, the toxicity value of the agent and the classifier

value of the agent is calculated from at least one member of the group consisting of gene expression levels and protein expression levels measured in living cells cultured *in vitro*.

14. (Original) The method of Claim 13 wherein at least two members of the group consisting of the efficacy value of the agent, the toxicity value of the agent and the classifier value of the agent are calculated from at least one member of the group consisting of gene expression levels and protein expression levels measured in living cells cultured *in vitro*.

15. (Original) The method of Claim 13 wherein the efficacy value of the agent, the toxicity value of the agent and the classifier value of the agent are calculated from at least one member of the group consisting of gene expression levels and protein expression levels measured in living cells cultured *in vitro*.

16. (Original) The method of Claim 13 wherein the living cells are selected from the group consisting of heart cells, liver cells and adipocyte cells.

17. (Original) The method of Claim 16 wherein the living cells are 3T3L1 adipocyte cells.

18. (Original) The method of Claim 1 wherein the defined biological activity is the ability to affect a biological process *in vivo*, and wherein at least one member of the group consisting of the efficacy value of the agent, the toxicity value of the agent and the classifier value of the agent is calculated from at least one member of the group consisting of gene expression levels and protein expression levels measured in living cells cultured *in vitro*.

19. (Original) The method of Claim 18 wherein the biological process is an acute or chronic disease in a mammal.

20. (Original) The method of Claim 1 wherein the defined biological activity is the ability to affect a biological process *in vivo*, and wherein at least two members of the group consisting of the efficacy value of the agent, the toxicity value of the agent and the classifier value of the agent are calculated from at least one member of the group consisting of gene expression levels and protein expression levels measured in living cells cultured *in vitro*.

21. (Original) The method of Claim 20 wherein the biological process is an acute or chronic disease in a mammal.

22. (Original) The method of Claim 1 wherein the defined biological activity is the ability to affect a biological process *in vivo*, and wherein the efficacy value of the agent, the toxicity value of the agent and the classifier value of the agent are calculated from at least one member of the group consisting of gene expression levels and protein expression levels measured in living cells cultured *in vitro*.

23. (Original) The method of Claim 22 wherein the biological process is an acute or chronic disease in a mammal.

24. (Original) The method of Claim 1 wherein the defined biological activity is the ability to affect a biological process in a first living tissue, and wherein at least one member of the group consisting of the efficacy value of the agent, the toxicity value of the agent and the classifier value of the agent is calculated from at least one member of the group consisting of gene expression levels and protein expression levels measured in a second living tissue, wherein the first living tissue is a different type of tissue than the second living tissue.

25. (Original) The method of Claim 1 wherein the defined biological activity is the ability to affect a biological process in a first living tissue, and wherein at least two members of the group consisting of the efficacy value of the agent, the toxicity value of the agent and the classifier value of the agent are calculated from at least one member of the group consisting of

gene expression levels and protein expression levels measured in a second living tissue, wherein the first living tissue is a different type of tissue from the second living tissue.

26. (Original) The method of Claim 1 wherein the defined biological activity is the ability to affect a biological process in a first living tissue, and wherein the efficacy value of the agent, the toxicity value of the agent and the classifier value of the agent are calculated from at least one member of the group consisting of gene expression levels and protein expression levels measured in a second living tissue, wherein the first living tissue is a different type of tissue than the second living tissue.

27. (Original) The method of Claim 1 wherein at least one member of the group consisting of the efficacy-related population of genes and the efficacy-related population of proteins yields at least one efficacy-related gene expression pattern, or efficacy-related protein expression pattern, in response to the agent, that correlates with the presence of at least one desired biological response caused by the agent in a living thing, wherein the at least one efficacy-related gene expression pattern, or at least one efficacy-related protein expression pattern, appears before the desired biological response.

28. (Original) The method of Claim 1 wherein at least one member of the group consisting of the toxicity-related population of genes and the toxicity-related population of proteins yields at least one toxicity-related gene expression pattern, or toxicity-related protein expression pattern, in response to the agent, that correlates with the presence of at least one undesirable biological response caused by the agent in a living thing, wherein the at least one toxicity-related gene expression pattern, or at least one toxicity-related protein expression pattern, appears before the undesirable biological response.

29. (Original) The method of Claim 1 wherein (1) at least one member of the group consisting of the efficacy-related population of genes and the efficacy-related population of proteins yields at least one efficacy-related gene expression pattern, or efficacy-related protein expression pattern, in response to the agent, that correlates with the presence of at least one

desired biological response caused by the agent in a living thing, wherein the at least one efficacy-related gene expression pattern, or at least one efficacy-related protein expression pattern, appears before the desired biological response; and (2) at least one member of the group consisting of the toxicity-related population of genes and the toxicity-related population of proteins yields at least one toxicity-related gene expression pattern, or at least one toxicity-related protein expression pattern, in response to the agent, that correlates with the presence of at least one undesirable biological response caused by the agent in a living thing, wherein the at least one toxicity-related gene expression pattern, or at least one toxicity-related protein expression pattern, appears before the undesirable biological response.

30. (Original) The method of Claim 1 comprising the steps of:

(a) making at least one comparison from the group consisting of:

(1) comparing an efficacy value of the agent to a scale of efficacy values to yield an efficacy comparison result, wherein each efficacy value represents at least one expression pattern of the same efficacy-related population of genes, or at least one expression pattern of the same efficacy-related population of proteins;

(2) comparing a toxicity value of the agent to a scale of toxicity values to yield a toxicity comparison result, wherein each toxicity value represents at least one expression pattern of the same toxicity-related population of genes, or at least one expression pattern of the same toxicity-related population of proteins;

(3) comparing a classifier value of the agent to a scale of classifier values to yield a classifier comparison result, wherein each classifier value represents at least one expression pattern of the same classifier population of genes, or at least one expression pattern of the same classifier population of proteins; and

(b) using the comparison result(s) obtained in step (a) to determine whether the agent possesses the defined biological activity.

31. (Original) The method of Claim 30 comprising the steps of:

(a) making at least two comparisons from the group consisting of:

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(1) comparing an efficacy value of the agent to a scale of efficacy values to yield an efficacy comparison result, wherein each efficacy value represents at least one expression pattern of the same efficacy-related population of genes, or at least one expression pattern of the same efficacy-related population of proteins;

(2) comparing a toxicity value of the agent to a scale of toxicity values to yield a toxicity comparison result, wherein each toxicity value represents at least one expression pattern of the same toxicity-related population of genes, or at least one expression pattern of the same toxicity-related population of proteins;

(3) comparing a classifier value of the agent to a scale of classifier values to yield a classifier comparison result, wherein each classifier value represents at least one expression pattern of the same classifier population of genes, or at least one expression pattern of the same classifier population of proteins; and

(b) using the comparison results obtained in step (a) to determine whether the agent possesses the defined biological activity.

32. (Original) The method of Claim 30 comprising the steps of:

(a) comparing an efficacy value of the agent to a scale of efficacy values to yield an efficacy comparison result, wherein each efficacy value represents at least one expression pattern of the same efficacy-related population of genes, or at least one expression pattern of the same efficacy-related population of proteins;

(b) comparing a toxicity value of the agent to a scale of toxicity values to yield a toxicity comparison result, wherein each toxicity value represents at least one expression pattern of the same toxicity-related population of genes, or at least one expression pattern of the same toxicity-related population of proteins;

(c) comparing a classifier value of the agent to a scale of classifier values to yield a classifier comparison result, wherein each classifier value represents at least one expression pattern of the same classifier population of genes, or at least one expression pattern of the same classifier population of proteins; and

(d) using the efficacy comparison result, the toxicity comparison result and the classifier comparison result to determine whether the agent possesses the defined biological activity, wherein steps (a), (b) and (c) can occur in any order with respect to each other.

33. (Currently Amended) A population of oligonucleotide probes ~~selected from the group consisting of the population of oligonucleotide probes set forth in Table 1 (SEQ ID NOs: 51-102), the population of oligonucleotide probes set forth in Table 2 (SEQ ID NOs: 52, 53, 58, 59, 65, 66, 68, 69, 71, 73, 75, 76, 78, 82, 86, 88-90, 93, 94, 96, 101), the population of oligonucleotide probes set forth in Table 4 (SEQ ID NOs: 153-207), the population of oligonucleotide probes set forth in Table 5 (SEQ ID NOs: 213-218), the population of oligonucleotide probes set forth in Table 6 (SEQ ID NOs: 551-894, 155, 157, 164, 171, 178, 179, 185, 188, 204-206), the population of oligonucleotide probes set forth in Table 7 (SEQ ID NOs: 950-1019, 863, 93, 94, 97), the population of oligonucleotide probes set forth in Table 8 (SEQ ID NOs: 1036-1057, 951, 955, 957, 863, 959, 960, 63, 962, 966, 971-974, 980, 981, 984, 987, 989, 991-996, 93, 94, 998-1001, 97, 1004-1014, 1017-1019), the population of oligonucleotide probes set forth in Table 9 (SEQ ID NOs: 1239-1428, 558, 561, 158, 565, 574, 576, 578, 585, 592, 597, 600, 609, 612, 613, 617, 163, 625, 641-643, 646, 647, 655-657, 661, 666, 171, 681, 697, 700, 706, 707, 712, 720, 727, 740, 745, 748, 749, 755-757, 762, 766, 767, 769-771, 773, 778, 780, 786, 789, 794, 800, 803, 804, 188, 189, 191, 813, 814, 822, 823, 556, 828, 831, 832, 836, 840, 844, 864, 871, 876, 878, 883, 884, 889-891), the population of oligonucleotide probes set forth in Table 10 (SEQ ID NOs: 1449-1471, 952, 956, 957, 963, 975, 976, 981, 983, 984, 986, 990, 999-1001, 1004-1007, 1012-1014), the population of oligonucleotide probes set forth in Table 12 (SEQ ID NOs: 1731-1996, 52, 951, 1450, 957, 1452, 1455, 65, 68, 69, 72, 75, 1457, 967, 1458, 970, 971, 974, 1462, 82, 977, 978, 982, 90, 989, 990, 215, 999-1001, 96, 1468, 1005, 1006, 218, 1014, 1018, 1019), and the population of oligonucleotide probes set forth in Table 14~~

~~(SEQ ID NOs: 2796 3683, 1732, 1734, 53, 1740, 1449, 1450, 1747, 1748, 1037, 1759, 957, 1774, 60, 1780, 63, 1797, 962, 1808, 1041, 1809, 1817, 1818, 1820, 1824, 71, 72, 1833, 966, 1873, 970 973, 1879, 1046, 1047, 976, 1898, 1904, 80, 1910, 86, 1932, 1933, 1941, 1049, 989, 1953, 991 993, 1050, 1051, 994, 215, 216, 93, 94, 998 1001, 1465 1467, 1957, 1002, 214, 1962, 1005 1007, 1056, 1057, 1009 1014, 1974, 1975, 1977, 1979, 1016 1019, 1994, 101).~~

34-67. (Canceled).

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